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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WOODS, ERIC V

ART UNIT PAPER NUMBER

2672

DATE MAILED: 11/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/669,580

Applicant(s)

SUDOH ET AL.

Examiner

Eric V. Woods

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 16 August 2005 has been entered.

Status of Claims

Claims 1-6 have been canceled.

Claims 7-12 have been amended.

Response to Arguments

Applicant's arguments with respect to claims 7-12 have been considered but are moot in view of the new grounds of rejection. The amended claims have changed the language around, but the functionality discussed therein has not changed.

The same art of record in the same configuration has been used to reject the amended claims. Applicant is warned that the next Office Action **will** be final, and the examiner could have issued a final action on first but chose not to in order to allow applicant the opportunity to amend the claims to further distinguish and point out their invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, the term "scales" is used on page 2, line 21 of the amended claim as part of claim 7. This term has no antecedent basis in the claim. Further, it is unknown what type of scales is being referred to. For purposes of examination, examiner will interpret 'scales' to mean 'logarithmic scales'. The term 'scales' is used in several other parts of the claim and is further unclear. This interpretation is buoyed by the last clause of claim 7, where it is noted that the when neither axis is marked as logarithmic, an "ordinary graph" is displayed, which one of ordinary skill in the art would understand to mean as a linear graph.

Claim 12 has the same defects as claim 7.

Claims 8-11 are rejected as not correcting the deficiencies of their parent claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over ORCAD/PSpice in view of Spiegel – backed by Lab ('Lab 1 Help' – PSpice lab from school of Electrical Engineering, University of Toronto, from Internet Archive, date 06/18/02, which is earlier than applicant's priority filing date) and Official Notice.

**Examiner is taking Official Notice. [Claim 12 is a computer program implementing the method of claim 1; therefore any rejections valid on claim 1 is equally valid on claim 6 without further comment. It would have been obvious to use software to perform the plotting tasks in any case, as computers have been used for similar tasks for the last 30+ years (whether as paper printouts or on a computer display (e.g. CRT, monochrome terminal, etc.))

As to claims 7 and 12,

A logarithmic graph plotting apparatus comprising:

-A range setting unit for setting an x-coordinate range for a graph ranging from an arbitrary x-minimum value to an arbitrary x-maximum value, and a y-coordinate range for the graph ranging from an arbitrary y-minimum value to an arbitrary y-maximum value; (Spiegel page 3, section d, states that "Probe provides ... a range of choices to manipulate the graphics, such as range of the axes, labels, etc." and the program *prima facie* graphs two-dimensionally. Further, OrCAD shows page 5, Log X axis and Log Y axis buttons, proving x and y coordinate ranges, thus directly proving that such data is

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graphed, if it can be manipulated by adjusting the layout of the axes.)(Lab page 5 shows the 'Axis Settings' dialog box used in probe where this dialog box clearly allows the user to choose the settings for each of the x- and y-axes where for each axis the range and scale can be defined, with the range being arbitrarily selectable)

-A logarithmic axis setting unit for selecting whether to set at least one of x- and y-axes as corresponding logarithmic x- and y-axes; (OrCAD page 5 and page 8 clearly shows that the toolbars in Probe have buttons 'Log X Axis' and 'Log Y Axis' that allow the user to toggle the axes from linear to log and back and forth)

-A logarithmic scale marking unit for marking x- and/or y-axes with logarithmic scales in the x- and y-coordinate ranges set by the range setting unit; and (OrCAD page 5, description of Probe toolbar buttons, "Log X axis" and "Log Y axis" as options to switch the views between linear and log views, obviously such capability inherently requires the marking units when such graphs are generated so that they can be displayed)

-An x-logarithmic scale number determining unit for determining a number of logarithmic scales for the x-axis, based on a number obtained by evaluating a difference between a logarithm of the x-minimum value and a logarithm of the x-maximum value and converting the calculated difference to an integer; (See Lab page 5, where the 'Axis Settings' dialog box of Probe is shown, wherein the user can select a desired arbitrary range; obviously, the PSpice system would only compute the logarithmic axis over the desired data range. Similarly, it would be inherent (and examiner takes Official Notice) that PSpice does in fact work this way – that the data range chosen by the user is determined and the axes are appropriately generated – for example, if the user defined

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range was 500Hz to 50kHz, PSpice puts one axis per order of magnitude, and operates in base 10 – see for example page 9 of 'Brief Spice Tutorial' from University of Utah, Fall 2002 (reference predates applicant's priority filing date), where each mark on the axis shown represents one order of magnitude. Clearly, this shows that PSpice functions in the manner specified, and it does generate an integer number of axes where that integer is the range of the data as set forth in applicant's claim)

-An x-logarithmic scale-plotting control unit for controlling plotting of logarithmic scales for the x-coordinate range such that the determined number of logarithmic scales for the x-coordinate range are plotted when the x-axis is selected to be set as the logarithmic x-axis, and such that no scales are plotted for the x-coordinate range when the x-axis is not selected to be set as the logarithmic x-axis; (Clearly PSpice/ORCAD, Spiegel, and Lab all teach that PSpice software Probe generates such graphs, an example of which is also shown in page 9 of 'Brief Spice Tutorial' as above.)(Lab page 5 shows the 'Axis Settings' dialog box used in probe where this dialog box clearly allows the user to choose the settings for each of the x- and y-axes where for each axis the range and scale can be defined, with the range being arbitrarily selectable)(When the Log X-axis button in PSpice page 5 or the X-axis settings tab in Page 5 of Lab is set to 'Log' the determined number of scales are displayed on the screen as set forth there. If the log setting is not enabled or the button is not pressed, the graph is linear, which clearly corresponds to the 'no scales' requirement recited therein.)

-A y-logarithmic scale number determining unit for determining a number of logarithmic scales for the y-axis, based on a number obtained by evaluating a difference between a

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logarithm of the y-minimum value and a logarithm of the y-maximum value and converting the calculated difference to an integer; (same reasoning as set forth above for the x-axis – each axis has its own 'Axis Settings' dialog box)

-A y-logarithmic scale-plotting control unit for controlling plotting of logarithmic scales for the x-coordinate range such that the determined number of logarithmic scales for the y-coordinate range are plotted when the x-axis is selected to be set as the logarithmic y-axis, and such that no scales are plotted for the x-coordinate range when the y-axis is not selected to be set as the logarithmic y-axis; (Clearly PSpice/ORCAD, Spiegel, and Lab all teach that PSpice software Probe generates such graphs, an example of which is also shown in page 9 of 'Brief Spice Tutorial' as above.)(When the Log Y-axis button in PSpice page 5 or the Y-axis settings tab in Page 5 of Lab is set to 'Log' the determined number of scales are displayed on the screen as set forth there. If the log setting is not enabled or the button is not pressed, the graph is linear, which clearly corresponds to the 'no scales' requirement recited therein.)

-A logarithmic graph plotting control unit for plotting on a display screen a logarithmic graph corresponding to the plotted logarithmic scales corresponding to the selected at least one of the x- and y-axes when the at least one of the x- and y-axes is selected, and for plotting on the display screen an ordinary graph corresponding to the x- and y-axes when neither of the x- and y-axes is selected to be set as the corresponding logarithmic x- and y-axes. (Clearly PSpice/ORCAD, Spiegel, and Lab all teach that PSpice software Probe generates such graphs, an example of which is also shown in page 9 of 'Brief Spice Tutorial' as above. Also see previously cited reference Leach

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page 5 where example graphs with such vertical lines are shown) (When the Log X-axis button in PSpice page 5 or the X-axis settings tab in Page 5 of Lab is set to 'Log' the determined number of scales are displayed on the screen as set forth there. If the log setting is not enabled or the button is not pressed, the graph is linear, which clearly corresponds to the 'no scales' requirement recited therein.)

Reference Spiegel clearly discloses that the PSpice Probe software graphs data and can be used to manipulate how the data is shown and can set the data ranges shown. The quick reference guide from the software's manufacturer – reference OrCAD - clearly shows that the software can toggle back and forth between linear and log views. Reference Lab is only included to provide a concrete example of certain crucial details of the operation of PSpice, namely the Axis Settings dialog box. Examiner takes Official Notice that the software can perform the recited functions – as of 1999, the software was available and was used by examiner (versions 8.0, 9.1 was available by late 2000). It would have been obvious to combine OrCAD and Spiegel, as Spiegel is a tutorial on how to use the software described in OrCAD, and Lab is also another tutorial on how to use the PSpice software, and examiner takes Official Notice to back up these positions and also provides the 'Brief Spice Tutorial' as evidence to back that up. Applicant never challenged this Official Notice before filing of the RCE, so applicant no longer has the opportunity to challenge it. Further, the evidence, as stated, above, clearly establishes that PSpice will show no scales (e.g. linear mode only) when the log axis functionality is not present.

As to claim 8,

The logarithmic graph plotting apparatus according to claim 7, wherein the range setting unit comprises a unit for displaying on the display screen a range setting image in which the x-minimum value and the x-maximum value of the x-coordinate range and the y-minimum value and the y-maximum value of the y-coordinate range are indicated; (Axis Setting dialog box shown in Lab page 5)(firstly, Spiegel teaches that the Probe program can be used to set the range, and OrCAD specifically shows in the toolbar button descriptions that there are tabs in the Axis Settings dialog box, which is identical to the "range setting picture" specified by applicant (e.g. applicant's Figs. 2A and 2B), where range and the log/linear options for both axes can be selected, as specified in the captions next to the "Log X Axis" and "Log Y Axis" buttons)(obviously, both windows for the axes could be open at the same time, or else such modification would have been trivially obvious)

-Wherein the logarithmic axis setting unit comprises a displaying unit for displaying on the display screen a logarithmic axis setting image including items for selecting whether to set each of the x- and y-axes as the corresponding logarithmic x- and y-axes; and (Axis Settings dialog box clearly shows this option; the toolbars in Probe also have this option as discussed in the rejection to claim 7 above, and on pages 5 and 9 of the OrCAD quick reference guide, etc.)

-Wherein the range setting image and the logarithmic axis setting image are displayed on the display screen in parallel. (Range Settings dialog box, both options are shown on the screen at the same time)(Examiner takes Official Notice that both are shown on the screen at the same time as well, and further see the 'Brief Spice Tutorial', page 9,

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where in the bottom right portion of that image the start and end frequencies (e.g. max and min values) for one of the axes is shown).

Motivation and combination are taken from the rejection to the parent claim and are herein incorporated in their entirety by reference.

As to claim 9,

The logarithmic graph plotting apparatus according to claim 7, further comprising a unit for indicating error when at least one of the x- and y-axes is selected to be set as the corresponding x- and/or y-logarithmic axes in the logarithmic axis setting unit, and when a value in the at least one of the x- and y-coordinate ranges corresponding to the selected at least one of the x- and y-axes is not positive in the range setting image.

The references do not expressly teach these limitations. However, it would have been obvious that since a log function by definition does not have a definite value for zero (the function evaluates to infinity or is a division by zero) and is undefined for negative numbers, any attempt to use a log axis plot for a data set with negative numbers would cause an error. It is a fundamental of the software engineering and programming arts that when a program experiences an error, it should display an error dialog box explaining, as much as possible, what the error was and what caused it, for diagnostic purposes and such that the user can avoid making similar errors again. Therefore, it would have been obvious to show an error box stating that the functionality of a log axis was not valid over a data set with negative numbers, or at the very least to merely show an error message, as shown by applicant (Fig. 2X).

Examiner takes Official Notice that the program in fact does this. Any attempt to perform log functionality on a data set with a value of zero or negative numbers in the x data set / range results in the program giving an error message and not proceeding any further. Motivation / combination is taken from the parent claim and incorporated herein by reference without further comment.

As to claim 11,

The logarithmic graph plotting apparatus according to claim 7, wherein the items in the logarithmic axis setting image for selecting whether to set the x- and/or y-axes as the corresponding logarithmic axes comprise check boxes.

Reference Spiegel does not explicitly teach this limitation. However, given that reference OrCAD clearly shows that toggle buttons that only had two states – like the recited check boxes – that have the recited functionality (switching between linear and log axes), it would have been obvious to modify the software to use check boxes instead of toggle buttons, as each have the same functionality and Spice uses check boxes in the X-axis and Y-axis tabs under the Axis Settings dialog box (see Lab page 5, and examiner takes official notice, and check boxes are shown there). Again, it is a fundamental of the software art that GUI input widgets (e.g. toggle buttons, check boxes, etc.) can be switched out with each other, particularly in Java GUI-based WYSWIG (what-you-see-is-what-you-get) IDE (integrated development environments) and web-layout tools that have been available since before 2000, and the Java language also allows the specification of Radio-button and Checkbox primitives (“CORE Web programming”, see attached reference. The noted Java 1.1 package was released

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in 2000). It would have been obvious to combine OrCAD and Spiegel, as Spiegel is a tutorial on how to use the software described in OrCAD, and examiner takes Official Notice to back up these positions, and it would have been obvious to so modify the program of OrCAD to use check boxes, as it is a fundamental of the art (see attached CORE java reference as one example of this).

Claim 10 is rejected under 35 U.S.C. 103(a) as unpatentable over OrCAD/PSpice, Spiegel, and Lab as applied to claim 7 and further in view of Tutorial ('Brief Spice Tutorial' for Fall 2002 from University of Utah).

The references do not expressly teach this limitation, but Tutorial shows it on page 9 (that is, the straight edges extending from each of the logarithmic scales. Also see previously cited reference Leach page 5 where example graphs with such vertical lines are shown. It is well known in the art and trivial to do so in graphic displays of data.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric V. Woods whose telephone number is 571-272-7775. The examiner can normally be reached on M-F 7:30-4:30 alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 571-272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric Woods

Jeffery A. Bries
JEFFERY BRIER
PRIMARY EXAMINER

November 16, 2005